

## **REMARKS**

Claims 15-24 were presented for examination. Claims 15-24 were rejected in the Office Action dated November 16, 2007.

Claims 15, 16, and 24 are hereby amended merely to more specifically recite inherent aspects of the invention as originally claimed. Claim 23 is hereby amended to correct a typographical error.

Reconsideration of this application, and allowance of all pending claims 15-24 are hereby respectfully requested.

### Supplemental Information Disclosure Statement

A supplemental Information Disclosure Statement including additional references is submitted herewith. The Examiner is respectfully requested to indicate consideration of these references in the next communication to the Applicants.

### Claim Objections

Claims 23 and 24 were objected to because of informalities. Claim 23 is amended herein to correct the word “or” to “of.” Claim 24 is amended herein to recite “overlapping portions encompassed by the outlined area are manually adjusted.” Therefore, informalities associated with claims 23 and 24 are overcome. Withdrawal of this objection is respectfully requested.

### Rejection under 35 U.S.C. § 103(a)

Claims 15 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over

U.S. Patent No. 5,995,108 to Isobe (“Isobe”) in view of U.S. Patent Application Publication No. 2003/0011619 (“Jacobs”). This rejection is respectfully traversed.

Independent claim 15 specifically recites:

. . . a user interface having a first display area for displaying a panoramic image and a second display area for displaying the two or more single view images projected from the panoramic image, the two or more single view images having overlapping portions at least partially encompassed by at least one outlined area, each pixel in the overlapping portions encompassed by the outlined area having an opacity value that is determined by the location of the pixel in the outlined area and a predetermined opacity curve; and  
an image seamer for *seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image, wherein the opacity values of the pixels in the overlapping portions encompassed by the outlined area are manually adjusted by changing the size of the outlined area in the second display area.* (Emphasis added).

The interactive seamer apparatus of claim 15 includes a user interface and an image seamer. The user interface has a first display area and a second display area. The first display area displays a panoramic image that is formed by seaming two or more single view images vertically or horizontally in a partly overlapping manner. The second display area displays two or more single view images. Each pixel in the overlapping portions has an opacity value that is determined by the location of the pixel. The image seamer seams two or more single view images in a partly overlapping manner. The opacity values of the pixels in the overlapping portions of the single view images are adjusted by changing the size of an outlined area in the second display area.

Claim 15, as amended, is not obvious over the combination of Isobe and Jacobs for at least the following reasons: (i) Isobe and Jacobs fail to disclose the feature of “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image, wherein the opacity values of the pixels . . . are manually adjusted by

changing the size of the outlined area in the second display area,” (ii) Isobe and Jacobs are incompatible and cannot be combined, and (iii) there is no motivation to combine Isobe and Jacobs.

First, the feature of “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image, wherein the opacity values of the pixels . . . are manually adjusted by changing the size of the outlined area in the second display area” is advantageous because a user can conveniently remove or reduce artifacts in the panoramic image by changing the size of the outlined area. See, for example, specification, p.12, ll. 21-26.

This feature is not disclosed in any of the cited references taken alone or in combination. First, Isobe does not disclose “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image.” Isobe relates to generating three-dimensional data measured by X-ray CT device. See Isobe, col. 7, ll. 51-59. In Isobe, two or more two-dimensional projected images representing different surface depths are completely overlapped. Each of the two-dimensional projected images is assigned a different opacity value to compose a three-dimensional image. See Isobe, col. 11, line 30 – col. 12, line 6. Therefore, Isobe fails to disclose “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image” as recited in claim 15, as amended. Further, Isobe does not disclose adjusting the opacity values of the pixels by manually adjusting the outlined area. In Isobe, the opacity values of the two-dimensional images are adjusted by moving sliders 331. See Isobe, col. 10, ll. 29-44. In other words, in Isobe, the opacity is not adjusted by changing the size of an outlined area in the two-dimensional image but instead by moving sliders 331. Therefore,

Isobe does not disclose the feature of “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image, wherein the opacity values of the pixels . . . are manually adjusted by changing the size of the outlined area in the second display area” as recited in claim 15, as amended.

Neither does Jacobs disclose the feature of “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image, wherein the opacity values of the pixels . . . are manually adjusted by changing the size of the outlined area in the second display area.” At best, Jacobs discloses blending the overlapping portions of the single view images by changing the opacity values of single view images. See Jacobs, paragraph [0038]. Nowhere in Jacobs does it state that the opacity values of the pixels are adjusted by changing the size of the outlined area of any image. Therefore, Jacobs also fails to disclose the feature of “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image, wherein the opacity values of the pixels . . . are manually adjusted by changing the size of the outlined area in the second display area,” as recited in claim 15, as amended.

In this respect, the Office Action also admits that Jacobs does not disclose changing the opacity values manually. An Official Notice was taken in the Office Action that it is old and well known in the arts to accomplish something that is automatic by manual means. Applicants respectfully disagree. Jacobs not only fails to disclose changing the opacity values manually but it also fails to disclose adjusting the opacity values of the pixels “by changing the size of the outlined area in the second display area.” Nowhere in Jacobs does it disclose changing the size of the outline area to adjust the opacity values of the pixels either

automatically or manually. Therefore, Applicants respectfully submit that the Official Notice was taken improperly.

Second, Isobe and Jacobs are incompatible and cannot be combined. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. See MPEP § 2143.01 VI. Isobe is related to generating a three-dimensional image from completely overlapped two-dimensional images. Each of the two-dimension images represents an image at different surface depth. In contrast, the images in Jacobs are partially superimposed to form a panoramic image. See Jacobs, paragraph [0038]. The images in Jacobs do not represent images at different surface depths. The images being combined as well as the images produced in Isobe and Jacobs are of completely different nature; and therefore, the principle of operation in Isobe would need to be modified for combination with Jacobs.

Third, there is no suggestion or motivation to modify Isobe for combination with Jacobs. Jacobs combines two single view images partly covering the same view. At the edges where the single view images overlap, artifacts arise due to difference in perspective of the single view images. Therefore, Jacobs controls the opacity values of images at the joining areas to reduce artifacts in a panoramic image. In contrast, in Isobe, the translucence and opacity values of two-dimensional images are set intentionally to emphasize different characteristic of the body (e.g., head, bone and blood vessel). See Isobe, col. 6, ll. 9-21. Isobe does not include artifacts as in Jacobs because each two-dimensional image represents different characteristics of the body. Features shown in the combined three-dimensional image are the result of an intentional choice by a user to emphasis such features; and thus, the

three-dimensional image in Jacobs does not include artifacts to be removed or reduced.

Therefore, there is no suggestion or motivation to combine Isobe with Jacobs.

For at least the above reasons, claim 15, as amended, is patentable over the combination of Isobe and Jacobs.

Claim 24 also recites the feature of “seaming the two or more single view images vertically or horizontally in a partly overlapping manner into the panoramic image, wherein the opacity values of the pixels . . . are manually adjusted by changing the size of the outlined area in the second display area” Therefore, essentially the same arguments for claim 15 are equally applicable to claim 24. Accordingly, Applicants respectfully submit that claim 24 is also patentable over the combination of Isobe and Jacobs.

Claims 16-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over various combinations of U.S. Patent No. 6,046,399 to Teo (“Teo”), Isobe and U.S. Patent No. 4,470,779 to Cleary et al. (“Cleary”). This rejection is respectfully traversed.

Independent claim 16, as amended, specifically recites:

“a user interface having a first display area for displaying a panoramic image generated from a number of single view images and a second display area for displaying a selected single view image projected from the panoramic image, wherein *an array of two or more control points are superimposed within an area in the panoramic image corresponding to an interior of the selected single view image for manually warping parts of the panoramic image corresponding to the selected single view image by moving the control points, the warping being independent of placement or movement of the selected single view image within the panoramic image.*” (Emphasis added).

In panoramic images, objects visible in two or more neighboring single view images may not align properly. In the claimed invention, such misalignment is corrected by moving one or more control points superimposed on the interior of the selected single view image. By using an array of two or more control points within the single view image, the misalignment of objects in different locations of the panoramic images may be aligned properly. That is, different parts of the panoramic images may be warped differently so that different objects in the panoramic images are aligned properly. By aligning the objects, the panoramic images appear more natural and consistent.

Claim 16, as amended, is not obvious over the combination of Teo, Isobe and Cleary for at least the following reasons: (i) Isobe and Jacobs fail to disclose the feature of “an array of two or more control points are superimposed within an area in the panoramic image corresponding to an interior of the selected single view image for manually warping parts of the panoramic image corresponding to the selected single view image by moving the control points,” and (ii) Isobe is not compatible with Teo or Cleary.

First, the feature of “an array of two or more control points are superimposed within an area in the panoramic image corresponding to an interior of the selected single view image for manually warping parts of the panoramic image corresponding to the selected single view image by moving the control points” is not disclosed in any of the cited references taken alone or in combination. At best, Teo discloses dragging points 410 at four corners of quadrilateral 420. See Teo, col. 8, ll. The dragging points 410 in Teo are neither arranged in an array nor are they placed within the interior of the quadrilateral 420. The only point within the interior of the quadrilateral 420 is center point 430. The center point 430 is used for moving the entire quadrilateral 420 and not for warping parts of the panoramic image.

Therefore, in Teo, there is no control point within the *interior* of the single view image for warping parts of the panoramic image. Nowhere in Teo does it disclose that an array of two or more control points is superimposed within an area in the panoramic image corresponding to an interior of the selected single view image.

Neither does Isobe disclose this feature. As set forth above, Isobe merely discloses generating a composition image from multiple single view images by adjusting the opacity of each single view images. See Isobe, col. 11, line 30 – col. 12, line 6. Nowhere in Isobe does it disclose using any control points for warping parts of the composed image.

Cleary also fails to disclose this feature. Cleary was cited in the Office Action merely for disclosing an artificial horizon. Nowhere in Cleary does it disclose using any control points to warp any parts of the panoramic image.

Second, Isobe is not compatible with Teo or Cleary. As set forth above with respect to claim 15, Isobe is related to generating a three-dimensional image by completely overlapping two or more two-dimensional images each representing characteristics of the body at different surface depths. In contrast, Teo and Cleary is related to panoramic images generated by joining two-dimensional images horizontally or vertically. Therefore, the manner of combining images in Isobe is different from Teo and Cleary. Hence, the principle of operation in Isobe must be modified for combination with Teo and Cleary. Therefore, Isobe cannot be combined with Teo or Cleary.

Accordingly, claim 16 and its dependent claims 17-23 are patentable over the combination of Teo, Isobe and Cleary for at least the above reasons.



Closing

Applicants believe that the application is in condition for allowance of all claims herein, claims 15-24, and therefore an early Notice of Allowance is respectfully requested. If the Examiner believes that for any reason direct contact with Applicants' attorney would help advance the prosecution of this case to finality, the Examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,

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